

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF VIRGINIA  
NORFOLK DIVISION**

CENTRIPETAL NETWORKS, LLC,

Plaintiff,

V.

PALO ALTO NETWORKS, INC.,

Defendant.

No. 2:21-cv-00137-EWH-LRL

**REDACTED - PUBLIC VERSION**

**PLAINTIFF CENTRIPETAL NETWORKS, LLC'S  
OPPOSITION TO DEFENDANT'S MOTION FOR JUDGMENT  
AS A MATTER OF LAW PURSUANT TO FED. R. CIV. P. 50(a)**

## **TABLE OF CONTENTS**

I.	INTRODUCTION .....	1
II.	ARGUMENT .....	1
A.	Centripetal Presented Substantial Evidence of Direct Infringement of the '903, '797, and '573 Patents.....	1
1.	Literal Infringement .....	2
B.	There is Substantial Evidence of Infringement of the '437 Patent .....	4
1.	Literal Infringement .....	4
2.	Doctrine of Equivalents .....	7
C.	Centripetal Presented Substantial Evidence of Induced Infringement .....	8
D.	Centripetal Presented Substantial Evidence of Willful Infringement.....	9
E.	Centripetal is Entitled to Damages for Foreign Sales of the Accused Products ...	11
1.	Method Claims.....	12
2.	Apparatus Claims.....	14
F.	Centripetal Presented Sufficient Evidence to Support Foreign Sales .....	15
G.	Centripetal Presented Substantial Evidence to Support Reasonable Royalties ....	16
III.	CONCLUSION.....	20

## **I. INTRODUCTION**

Centripetal Networks, LLC (“Centripetal”) presented more than sufficient evidence to support its claims of direct and indirect infringement of Centripetal’s U.S. Patent Nos. 10,567,437 (“437 Patent”), 10,530,903 (“903 Patent”), 10,931,797 (“797 Patent”), 10,659,579 (“573 Patent”) (collectively, “Asserted Patents”), willfulness, and damages. The substantial evidence includes sworn trial testimony from numerous fact and expert witnesses, deposition testimony of Palo Alto Networks Inc.’s (“PAN”) employees, source code, testing of the accused products, and numerous PAN and Centripetal documents that were admitted into evidence. PAN disagrees with the evidence that Centripetal presented in its case, but its disagreement is not enough to prove that “as a matter of law” Centripetal did not present sufficient evidence to support its claims. Under Federal Rule of Civil Procedure Rule 50(a), when all reasonable inferences are drawn in Centripetal’s favor, the Court should deny PAN’s motion for judgment as a matter of law (“Motion”). Fed. R. Civ. P. 50(a); *Reeves v. Sanderson Plumbing Products, Inc.*, 530 U.S. 133, 150 (2000).

## **II. ARGUMENT**

### **A. Centripetal Presented Substantial Evidence of Direct Infringement of the ‘903, ‘797, and ‘573 Patents**

Centripetal presented substantial evidence regarding PAN’s infringement of the asserted claims of the ‘903, ‘797, ‘573 Patents. Centripetal’s technical expert, Dr. Cole, presented evidence that the Accused Products infringe each element of the asserted claims, citing over 30 exhibits include PAN’s own internal and public technical documentations and source code, as well of the testimony of PAN engineers and his own testing. *See e.g.*, Trial Tr. at 581:8-661:9, 797:14-813:17 citing PX-182, PX-185, PX-192, PX-193, PX-196, PX-197, PX-198, PX-199, PX-200, PX-208, PX-209, PX-210, PX-328, PX-330, PX-331, PX-332, PX-340, PX-341, PX-342, PX-361, PX-364, PX-367, PX-368, PX-370, PX-374, PX-388, PX-393, PX-394, PX-396, PX-400, PX-428. Indeed,

in its Motion, PAN admits to infringement of various claims elements, including generating log entries and the determining log entries elements. Motion at 5. PAN also does not dispute it infringes the “responsive to”/“based on” claim elements. Motion at 4-6. PAN only disputes the “correlation” element. Motion at 5-6.

### **1. Literal Infringement**

Contrary to PAN’s argument, Dr. Cole presented substantial evidence that NGFWs with Automated Correlation Engine (“ACE”) and the Cortex products each perform the correlating elements. *See e.g.*, Trial Tr. at 570:13-577:2, 587:9-591:20, 613:10-624:4, 644:12-645:4, 658:13-659:1; PX-192, PX-396, PX-361, PX-364, PX-393, PX-394, PX-400; Trial Tr. at 466:13-23 (8/9/2023 Zuk Tr. at 8:25-9:25, 40:25-42:07). With respect to the infringement case where NGFWs with ACE perform correlation, Dr. Cole pointed to technical manuals, source code, internal documents, and Mr. Zuk’s deposition testimony, all of which demonstrates that the NGFW will generate traffic logs that feed into ACE, which will correlate the log entry fields by matching various fields including IP addresses and timestamps. *See e.g.*, Trial Tr. at 570:13-577:2. For example, Dr. Cole cited PX-393, PAN’s own technical manual, to show that ACE uses the traffic logs generated by the NGFW to perform correlation and identify a host. PX-393 at 499. Dr. Cole also cited Mr. Zuk’s testimony stating the same. Trial Tr. at 466:13-23 (8/9/2023 Zuk Tr. at 8:25-9:25, 40:25-42:07). He also identified PAN’s source code showing that [REDACTED]

[REDACTED]

[REDACTED] Trial Tr. at 573:14-575:9 (citing PX-400 at 36-37, 213-214). Dr. Cole further pointed to PAN’s own internal documents showing that ACE correlates fields from traffic logs. Trial Tr. at 575:13-576:16 (citing PX-394 at 7). He further testified that this correlation is the impetus for identifying

a host, confirmed by PAN's own documents, which specifically state that the ACE identifies the compromised host. Trial Tr. at 577:3-580:16.

With respect to the infringement case where Cortex products perform correlation, Dr. Cole cited technical manuals, source code, internal documents, and testimony of PAN employees Mr. Zuk and Mr. Cohen who testified that Cortex will perform log stitching to correlate IP addresses (pre- and post- NAT). See e.g., Trial Tr. at 613:10-624:4. For example, Dr. Cole cited PX-192, PAN's own technical manual, to show that Cortex stitches logs together to correlate sessions. PX-192 at 13-14. He also cited PAN's source code to identify that [REDACTED]

[REDACTED] Trial Tr. at 617:3-15, 622:13-25 (citing PX-400 at 50, 230). Dr. Cole further pointed to PAN's own internal documents showing that Cortex correlates fields from traffic logs. Trial Tr. at 619:22-622:9 (citing PX-361 at 9 and PX-364 at 4-6). PX-364 provides an example of stitching log entries together based on the IP addresses corresponding to the first and second plurality of packets. PX-364 at 4-6. Dr. Cole further testified that this correlation is the impetus for generating and provisioning a rule, which PAN's own documents confirm. Trial Tr. at 581:8-584:9, 600:25-634:15. Thus, Centripetal has more than sufficient evidence demonstrating that PAN infringes these patent claims.

PAN's arguments regarding a "single log" in NGFW ignores how the NGFW and Cortex Products operate. Motion at 5-6. Indeed, PAN's "common sense" argument is belied by the fact that PAN added "Automated Correlation Engine" to the NGFWs and "log stitching" to the Cortex Products. If merely identifying the host from a traffic log was sufficient for PAN, it would not have needed Centripetal's patented technology in ACE or log stitching. Furthermore, PAN's argument that the Court excluded Dr. Cole from testifying that the session table itself is performing

the correlation is irrelevant because the substantial evidence presented at trial showed infringement, as discussed above.

## **B. There is Substantial Evidence of Infringement of the '437 Patent**

### **1. Literal Infringement**

Centripetal presented substantial evidence of PAN's infringement of Claim 8 of the '437 Patent. Dr. Mitzenmacher presented substantial evidence that the accused NGFW with Panorama products infringe each asserted claim element, identifying 19 exhibits including PAN's own internal and public technical documentations and source code, as well of the testimony of PAN engineers and Dr. Mitzenmacher's own testing. *See e.g.*, Trial Tr. at 873:1-961:9, 1009:8-1017:5, 581:8-661:9, 797:14-813:17, citing JX-2, PX-194, PX-207, PX-357, PX-359, PX-390, PX-400, PX-413, PX-424, PX-435, PX-446, PX-457, PX-460, PX-461, PX-466, PX-528, PX-529, PX-543, PX-549/DX-1. Indeed, in its Motion, PAN does not dispute the infringement of various claims elements, including the memory and processor, configure, receive, responsive to elements. *See* Motion at 7-9. PAN only appears to dispute the "provision ... a packet security gateway ... with one or more rules to be applied to all network traffic traversing the boundary" and the "modifying a switching matrix" element. Motion at 5-6. PAN's Motion on the '437 Patent should be rejected because it misstates the claim language, mischaracterizes Dr. Mitzenmacher's infringement analysis, and ignores the overwhelming evidence of infringement.

**"Modifying a Switching Matrix."** The modifying a switching matrix element appears in the following claim language: "*modify a switching matrix* of a local area network (LAN) switch associated with the packet security gateway *such that the LAN switch is configured to drop the portion of the received packets responsive to the determination by the packet security gateway.*" '437 Patent, Claim 8 (emphasis added). The claim recites a system which configures the packet security to "modify a switching matrix." Dr. Mitzenmacher presented substantial evidence that

the accused system has code to modify the switching matrix. Specifically, when a packet enters the switching matrix, it follows a path that goes from ingress to egress through the switch. Trial Tr. at 949:16-950:14, 951:16-952:11. In order to apply rules to the traffic, the rules are sent to the switch which modifies the path that the packet takes through the switch. Trial Tr. at 950:10-14, 952:12-954:3. Following the example above, the path of the packet through the switch changes and, instead of going to the egress, the packet is dropped. PX-357, 543, 528; Ralston Tr. at 36:10-37:2; Trial Tr. at 937:19-938:19, 948:20-956:6. In other words, if the rules require dropping certain traffic, the system will cause the switching matrix to be modified so that the packets do not go through the normal route of being switched out and will instead be dropped in memory. *Id.* Dr. Mitzenmacher testified that dropping in memory involved modification of the switching matrix. *See* Trial Tr. at 1003:22-1004:13; 1016:14-1017:5.

The rest of PAN's arguments are red herrings since they are not based on what is accused of infringement and improperly characterize how the accused NGFW works. Instead of discussing the accused products, PAN inaccurately narrows Dr. Mitzenmacher's infringement analysis to map the LAN switch to solely the Switch Management Card. Motion at 7-8.<sup>1</sup> Based on this incorrect premise, PAN argues that the Data Plane CPU is not on a physical device as the Switch Management Card and Data Plane CPU does not use the Switch Management Card to drop packets. Contrary to PAN's argument, Dr. Mitzenmacher showed that the NGFW with its layer 2 interfaces is a LAN switch since it provides layer 2 switching. PX-357; Trial Tr. at 936:1-938:19; *see also* Trial Tr. at 1005:25-1006:6. Thus, there is a switching matrix within the NGFW, which is modified with rule changes to drop packets. *Id.*; Trial Tr. at 949:16-956:6. And PAN ignores that

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<sup>1</sup> PAN's JMOL refers to DX-94 which is not admitted in evidence. Dr. Mitzenmacher discussed PX-543 which is admitted into evidence.

See, e.g., PX-453, Trial Tr. at 939:17-938:19, 950:15-954:7.

PAN's argument that "there is no evidence or testimony regarding any corresponding hardware in any of the other ten families" again rests on mischaracterizing the evidence and Dr. Mitzenmacher's testimony. Motion at 8. There is no dispute that all the accused NGFWs have the same PAN-OS software, and the layer 2 switching is configured with the PAN-OS software. Trial Tr. at 936:1-938:19; 958:14-955:23; PX-357, PX-424. For example, Dr. Mitzenmacher testified about PX-528, the hardware architecture from a NGFW model, which shows

Trial Tr. at 958:14-955:23. To the extent that PX-196 and PX-209 cited in PAN's Motion have any hardware differences, such differences are immaterial. There is no dispute that all the functionalities related to layer 2 switching are directed by the PAN-OS software, and PAN-OS causes the memory holding the rules and packet forwarding process to be modified to implement the new rules. See, e.g., PX-543, PX-357, PX-457, PX-549; Trial Tr. at 936:1-940:25.

**"One or More Rules."** Dr. Mitzenmacher presented overwhelming evidence that PAN applies rules and inspects all traffic traversing the boundary. Trial Tr. at 877:2-21; 880:13-881:21; 884:6-886:12, 891:5-905:14, 909:12-931:9; PX-194, PX-357, PX-359, PX-390, PX-400 at 102, 135, 239-240, PX-413, PX-424, PX-435, PX-446, PX-460, PX-461; Zuk Tr. at 300:1-8; Ralston Tr. at 193:13-18; *see also* Trial Tr. at 1009:8-1010:4, 1010:14-1011:5 (citing PX-194).

PAN improperly narrows the accused functionality by limiting the evidence of rules to solely those shown in Dr. Mitzenmacher's testing screenshots. Motion at 9, *citing* Trial Tr. 921:14-21. As Dr. Mitzenmacher testified, the rules that Panorama provided to NGFWs are not limited to the exemplary rules from his testing screenshots. Trial Tr. at 1011:16-1012:6 (one example rules



are the bulletproof IP addresses, high risk IP addresses, known malicious IP addresses, the same rules shown at Trial Tr. 921:14-21).

Instead of discussing the documents Dr. Mitzenmacher pointed to for the “one or more rules” element, PAN’s Motion focuses on a single document, DX-1, which Dr. Mitzenmacher did not rely on. PAN’s argument seems to be narrowly focused on a box in DX-1 called “firewall security policy lookup” (Motion at 9), but Dr. Mitzenmacher’s testimony did not limit the infringing rules to just this box. Indeed, Dr. Mitzenmacher explicitly testified that there is not a one-to-one mapping between the box “firewall security lookup” and the other boxes where the security policies also applied. Trial Tr. at 986:18-987:4. Dr. Mitzenmacher testified that the two condition checks such as “ingress process error” and “FW inspection applicable” fall under the application of rules, directly rebutting PAN’s arguments. Trial Tr. 979:9-982:9, 1012:25-1013:23.

PAN’s argument regarding non-IP packets is unsupported. Motion at 9. Dr. Mitzenmacher testified that he had not seen any evidence from PAN showing that non-IP packets crossing the boundary are not subject to the rules and, if they are crossing the boundary, these packets are subject to the rules. Trial Tr. at 976:13-23, 1015:13-1016:7. This testimony coupled with the plethora of documents demonstrating PAN inspects all packets with security rules and all threats, showing that the one or more rules are to be applied to all traffic traversing the boundary of a network. PX-461, PX-424; Trial Tr. at 880:13-881:21; 884:6-885:7, 897:22-905:14; PX-194, PX-461, PX-446, PX-359; Trial Tr. at 909:12-916:2. PAN’s argument is essentially that PAN does not apply security rules to all packets. But this does not make sense as no one would “buy a firewall if you could just bypass the security of the firewall.” Trial Tr. at 1009:8-1011:5, *citing* PX-194.

## **2. Doctrine of Equivalents**

PAN mischaracterizes Dr. Mitzenmacher’s doctrine of equivalents analysis. Dr. Mitzenmacher’s testimony discussed in depth numerous documents supporting infringement of

the provision and rule claim elements in a doctrine of equivalents analysis. *See, e.g.*, Trial Tr. at 877:2-21; 880:13-881:21; 884:6-886:12, 891:5-905:14, 909:12-931:9, 957:5-7; PX-194, PX-357, PX-359, PX-390, PX-400 at 102-103, 135, 239-240, PX-413, PX-424, PX-435, PX-446, PX-460, PX-461; Zuk Tr. at 300:1-8; Ralston Tr. at 193:13-18; *see also* Trial Tr. at 1009:8-1010:4, 1010:14-1011:5. PAN's Motion simply ignores the evidence.

### **C. Centripetal Presented Substantial Evidence of Induced Infringement**

*First*, Centripetal presented sufficient evidence that PAN knew of the Asserted Patents. *See herein*. At a minimum, Centripetal presented evidence that PAN knew of the Asserted Patents as of the filing date for purposes of inducing infringement. *Geoscope Techs. Pte. Ltd v. Google LLC*, No: 1:22-cv-01331-MSN-IDD, 2023 WL 8586382, at \*7-8 (Feb. 15, 2023, E.D. Va) (denying motion to dismiss induced and contributory infringement claims and finding complaint satisfies the knowledge requirement); *IOENGINE, LLC v. PayPal Holdings, Inc.*, Nos. 18-452-WCB, 18-826-WCB, 2019 WL 330515, at \*4-7 (D. Del. Jan. 25, 2019) ("As to [plaintiff]'s post-suit activities, however, knowledge of the patents was clearly conveyed to [plaintiff] by the service of the complaint."). *Smart Wearable Techs. Inc. v. Fitbit, Inc.*, 274 F. Supp. 3d 371, 373-375 (W.D. Va. 2017) ("the court is persuaded by the reasoning adopted by the majority of district courts that have ruled that a complaint provides sufficient notice of the existence of a patent to support a claim for indirect infringement occurring after the filing date.").

*Second*, Centripetal presented sufficient evidence of PAN's inducing infringement through the testimony of Dr. Cole, who testified that PAN performs the methods disclosed in the Asserted Patents, instructs its customers to perform the steps of the asserted claims and knew its customers' actions would infringe. 1/24/2024 Trial Tr. (Dr. Cole) at 660:10-661:11; DX-4; 8032:15-804:15. In particular, Dr. Cole testified that documents such as PAN's Administration Guide "show their customers exactly how to infringe." *Id.* at 660:15-23. Indeed, Dr. Mitzenmacher provided

supporting testimony regarding manuals being instructions to customers to use the infringing products. *See e.g.*, Trial Tr. at 892-10-209:9; 914:15-915:7; PX-435. The Federal Circuit has held this type of evidence –expert testimony supported by documentation – sufficient evidence of intent for purposes of induced infringement to deny a motion for judgment as a matter of law. *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1323 (Fed. Cir. 2009) (affirming denial of JMOL that defendant did not induce infringement based on evidence presented at trial including expert testimony and “instruction, tutorials, and other materials directing users to operate the accused products in an infringing manner”). Indeed, the Federal Circuit found this evidence, which is similar to the evidence Centripetal presented here, to conclude that it was “not persuaded the jury was unreasonable in finding that [defendant] possessed the requisite intent to induce at least one user of its products to infringe the claimed methods.” Thus, Centripetal presented sufficient evidence of PAN’s inducing infringement of its customers.

#### **D. Centripetal Presented Substantial Evidence of Willful Infringement**

Willfulness may be inferred from the totality of the circumstance. *Acumed LLC v. Stryker Corp.*, 483 F.3d 800, 810-11 (Fed. Cir. 2007) (upholding willfulness based on totality of circumstances, despite non-infringement opinion letter of counsel ). *First*, Centripetal presented evidence of PAN’s intent to infringe. Intent, in turn, “must be inferred from all the circumstances.” *Id.* at \*13-14 (citing *WCM Indus., Inc. v. IPS Corp.*, 721 F. App’x 959, 970) (denying defendants’ judgment as a matter of law on willfulness because ample evidence supported the jury’s finding of willful infringement). Contrary to PAN’s assertion, Centripetal’s evidence, as discussed below, shows such intent, and not that PAN merely continued selling its infringing products.

*Second*, PAN presented evidence of PAN’s pre-suit knowledge of the Asserted Patents and intent to infringe. Knowledge of the specific asserted patent is not requirement to support a finding of willful infringement. Rather, pre-suit knowledge of the existence of the patent is based on the

totality of the circumstances and can be based on circumstantial evidence. *Illumina, Inc. v. BGI Genomics Co.*, No. 19-cv-03770-WHO, 2022 WL 899421, at \*13-15 (N.D. Cal. Mar. 27, 2022); (knowledge of the specific patents is not required to support willful infringement) (internal quotes and citations omitted) (emphasis added). Knowledge of the specific asserted patent can be inferred from knowledge of related patents. *Id.*; *Kewazinga Corp. v. Microsoft Corp.*, 558 F. Supp.3d 90, 118-120 (S.D.N.Y. Sept. 1, 2021) (denying motion for summary judgment of no willful infringement where a reasonable factfinder could infer knowledge of the asserted patents); *SIMO Holdings Inc. v. Hong Kong uCloudlink Network Tech. Ltd.*, 396 F.Supp.3d 323 (S.D.N.Y. 2019) (denying judgment as a matter of law on a willful infringement claim based on evidence that the defendant was aware of the asserted patent's parent, the application for the asserted patent was pending at the time the defendant was aware of the parent patent, and the defendant's "internal architecture documents" bore "notable similarities" to the asserted patent). Marking of a product can support an inference that a defendant had knowledge of a patent. *3D Sys., Inc. v. Formlabs Inc.*, No. 13-civ.7973, 2014 WL 1904365, at \*3 (S.D.N.Y. May 12, 2014).

Here, Centripetal presented testimony and evidence showing that Centripetal marks its patent products upon issuance of the patents (1/23/2024 Trial Tr. at 339:18-20 (marking); 340:13-15 (marking website); 341:2-20 (marking procedures) and knew of the assertion of infringement. Trial Tr. at 660:15-661:9. Centripetal also produced evidence of the patents at issue marked on their website with their corresponding patent numbers on PX-787. Centripetal also produced evidence including discussions with PAN via Oppenheimer (*id.* at 353:10-354:5) (PX-944) as well as Centripetal's discussions with PAN and Shea & Co. about the patented technology, which included sending to PAN a teaser document and technical presentation (*id.* at 359:17-362:9); *id.* at 362:10-363:25 (demos); as well as Centripetal's NDA with PAN (*id.* at 354:13-358:2) (PX-122).

Jonathan Rogers, CTO of Centripetal, testified regarding LeadLander and HubSpot reports, which trace PAN's visits to Centripetal's product pages on its website and reports of visits from PAN employees who visited the site and consumed data sheets and other content. Trial Tr. at 365:11-366:9, 371:6-21. Jonathan Rogers also testified towards PAN's knowledge of Centripetal's related patents with the same specifications (*id.* at 365:11-371:21; 371:17-21); and of Centripetal's prior litigation against PAN's competitor (*id.* at 371:22-379:19; (PX-589) as well as Centripetal's licensing policies. *Id.* at 379:23-380:15. Jonathan Rogers also testified as to Centripetal's competition and options available to Centripetal's customers to obtain intelligence-based defense (*id.* at 363:8-17). The aforementioned evidence is also relevant to damages and includes the following exhibits: PX-944; PX-787; PX-122. Thus, Centripetal presented substantial evidence and, as a result, PAN's Motion regarding no willful infringement should be denied.

#### **E. Centripetal is Entitled to Damages for Foreign Sales of the Accused Products**

Centripetal presented legally sufficient evidence at trial that it is entitled to damages for foreign sales of the Accused Products. PAN's U.S. infringement results in foreign sales that is properly included in the royalty base. Centripetal demonstrated that PAN makes, tests, and sells the Accused Products from within the U.S. *See WesternGeco LLC v. ION Geophysical Corp.*, 138 S. Ct. 2129, 2138-39 (2018) (holding that foreign damages resulting from domestic acts of infringement are recoverable); *Plastronics Socket Partners, Ltd. v. Dong Weon Hwang*, No. 2:18-CV-00014, 2019 WL 4392525, at \*5 (E.D. Tex. June 11, 2019) (activities with a domestic component, such as selling a U.S.-made product abroad, "would constitute infringement under § 271(a), and thus, under the reasoning of *WesternGeco*, would be compensable even if the sale . . . ultimately occurred abroad."), *R. & R. adopted*, 2019 WL 2865079 (E.D. Tex. July, 3, 2019); *see also Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd.*, 807 F.3d 1283, 1294-96 (Fed. Cir. 2015). In *Carnegie*, the Federal Circuit affirmed the portion of the damages award based on products

made abroad but imported into the U.S. *Carnegie Mellon*, 807 F.3d at 1306. It also indicated that a royalty could include products “manufactured, delivered, and used entirely abroad,” if the sales were made in the U.S.<sup>2</sup> *Id.* at 1307-08.

It is undisputed that PAN tests and makes its hardware appliances (NGFWs and Panorama appliances) in the U.S. *See, e.g.*, Trial Tr. 1058:8-13 (French Tr. at 17:8-25, 18:2, 20:16-24). [REDACTED]

[REDACTED] Trial Tr. 865:18-22 (Ralston Tr. at 233:5-19); Trial Tr. (Cole) at 524:6-27, 809:17-22; Trial Tr. (Mitzenmacher) at 878:3-879:5, 879:25-880:12. Thus, the Accused Products infringe regardless of when they are sold.

Further, PAN has offered no disputed facts from which the Court could determine the location of PAN’s conduct or the nature of how it sells its products. Thus, PAN is not entitled to JMOL that it has made non-infringing foreign sales. *See, e.g., Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd.*, 807 F.3d 1283, 1309-10 (Fed. Cir. 2015) (affirming denial of JMOL that sales took place outside the U.S. because defendant failed to offer any evidence supporting that contention).

### **1. Method Claims**

Centripetal presented legally sufficient evidence at trial that it is entitled to damages for foreign sales of the Accused Products which infringe claim 1 of the ’573 Patent and claim 1 of the ’797 Patent (the “Asserted Method Claims”). PAN’s focus on where its products may be *used* once sold (Motion at 12-13) conflates the law regarding territoriality for infringement and damages. “[I]n circumstances in which ‘the damages-measuring product practices the method in

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<sup>2</sup> *Carnegie* involved products manufactured abroad whose sales were executed within the U.S. to global customers. 807 F.3d at 1309. The Federal Circuit’s reasoning that a domestic infringing activity renders foreign sales relevant to damages also applies here, where PAN makes Accused Products in the U.S. and then sells those products to global customers.

its normal intended use,’ the Federal Circuit has held infringement can be established when the product is made, used, or sold domestically.” Dkt. No. 702 (Order Denying-in Part PAN’s MSJ) at 23 (citing *Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd.*, 807 F.3d 1283, 1306-07 (Fed. Cir. 2015) (where physical product is employed to measure damages for the infringing use of patented methods, territoriality is satisfied when the domestic activities for that unit is present, even if others activities for that unit (e.g., making, using) take place abroad)).

As discussed above, PAN makes its infringing hardware products in the U.S. and loads the infringing PAN OS software onto its infringing NGFWs in the U.S. Centripetal further presented evidence that the relevant Accused Products infringe every step of the Asserted Method Claims “by developing, testing, and selling to its customers . . . products that practice the claimed methods” when used normally. *See*, Trial Tr. (Cole) at 584:17-586:7, 586:15-598:15, 598:17-599:9; 600:12-605:21, 607:10-617:18, 617:19-618:4; 618:5-637:13, 637:14-645:23, 645:24-646:7; 646:8-659:24, 659:25-660:4; 660:5-20; *see also* PX-180, 182, 185, 192, 196-200, 208, 209, 210, 340, 341, 342, 361, 364, 367, 368, 370, 388, 393, 394, 396, 400, 428; *see also R.R. Dynamics, Inc. v. A. Stucki Co.*, 727 F.2d 1506, 1519, App’x B (Fed. Cir. 1984) (royalty base for system and method claims properly included products made in U.S. for sale abroad).

With respect to foreign sales for induced infringement<sup>3</sup>, PAN induces infringement of the patented methods by instructing its customers to perform the steps of Claims 1 of the ’797 and ’573 Patents for the Accused Products which are manufactured in the U.S. *See* Trial Tr. (Cole) at 660:15-20 (testifying “[t]he Administration Guides provide details to show their customers exactly how to infringe [the method] claims.”); *see supra herein*.

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<sup>3</sup> If Centripetal is entitled to foreign sales for direct infringement, then it will also be entitled to foreign sales for induced infringement.

PAN's cited cases do not compel a different result because those cases did not address method claim damages based on domestic and foreign activity as in *Carnegie*. Motion at 12-13 (citing *NTP, Inc. v. Rsch. In Motion, Ltd.*, 418 F.3d 1282, 1318 (Fed. Cir. 2005) (no damages discussion); *W.L. Gore & Assocs., Inc. v. Medtronic, Inc.*, 874 F. Supp. 2d 526, 543 (E.D. Va. 2012) (same); *Joy Techs. Inc. v. Flakt, Inc.*, 6 F.3d 770, 773 (Fed. Cir. 1993) (no damages or foreign activity discussion); *Lucent Technologies, Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1317 (Fed. Cir. 2009) (same).

## 2. Apparatus Claims

For the apparatus claims, Centripetal demonstrated that PAN makes and sells the infringing combinations globally from the U.S. as integrated solutions with admissions from PAN's witnesses. *See, e.g.*, Trial Tr. at 1017:25-1018:6 (Lee Tr. at 83:02-83:19 [REDACTED]); *see also, e.g.*, Trial Tr. at 466:13-23 (Zuk Tr. at 293:18-295:12, 296:22-297:03, 300:01-08 [REDACTED]). Moreover, a defendant's separately sold products can infringe when designed to work together, and PAN sells each of the Accused Products involved in the infringing combinations. *See High Tech Med. Instrumentation, Inc. v. New Image Indus., Inc.*, 49 F.3d 1551, 1555-56 (Fed. Cir. 1995) (sales of products "designed, sold, and intended for use" as a combination can directly infringe); *see also Immersion Corp. v. Sony Comput. Ent. Am., Inc.*, No. C 02-0710 CW, 2005 U.S. Dist. LEXIS 4777, at \*16, \*23-24 (N.D. Cal. Jan. 10, 2005) (affirming damages with royalty base of separately sold components because defendant "advertises and sells all the accused products as part of the . . . 'system'" and "frequently highlights compatibility between system elements"). Making and sales that occur in the U.S. infringe under 35 U.S.C. § 271(a), regardless of the customer's location.

PAN makes certain Accused Products and completes the infringing combinations in the



U.S. *See, e.g.*, Trial Tr. 1058:8-13 (French Tr. at 17:08-13 [REDACTED]).

Making an infringing product is a compensable act under 35 U.S.C. § 271(a). Since the infringing act of making already occurs in the U.S., whether PAN's customer is also in the U.S. is irrelevant. *See WesternGeco LLC v. ION Geophysical Corp.*, 138 S. Ct. 2129, 2138-39 (2018); *see also Plastronics Socket Partners, Ltd. v. Dong Weon Hwang*, 2019 WL 4392525, at \*5 (E.D. Tex. June 11, 2019). Further, [REDACTED]

[REDACTED] *See* Trial Tr. at 1017:25-1018:6 (Lee Tr. at 83:02-83:19 [REDACTED]). Thus, PAN is not entitled to JMOL regarding combinations of Accused Products.

#### **F. Centripetal Presented Sufficient Evidence to Support Foreign Sales**

As discussed above, Centripetal has demonstrated that PAN sells the infringing combinations globally from the U.S. as integrated solutions. *See, e.g.*, Trial Tr. at 1017:25-1018:6 (Lee Tr. at 83:02-83:19 [REDACTED]); *see also, e.g.*, Trial Tr. at 466:13-23 (Zuk Tr. at 293:18-295:12, 296:22-297:03, 300:01-08 [REDACTED]). Centripetal presented evidence that [REDACTED]

[REDACTED] Trial Tr. 865:18-22 (Ralston Tr. at 233:5-13); Trial Tr. (Cole) at 646:15-20, 652:8-16, 659:25-660:4, 660:10-661:9, 809:14-19; Trial Tr. (Mitzenmacher) at 874:10-875:7, 879:23-880:12, 881:25-882:4, 882:21-883:11, 911:10-18. Centripetal also presented evidence that [REDACTED]

[REDACTED] Trial Tr. at 466:13-23 (Zuk Tr. 281:11-282:13, 283:9-23, 285:11-286:10,

293:18-295:12); Trial Tr. (Cole) at 611:12-20, 618:5-13, 656:9-657:15.

**G. Centripetal Presented Substantial Evidence to Support Reasonable Royalties**

Centripetal's damages expert, James Malackowski, opined with supporting evidence that PAN has and still is obtaining significant value from using the inventions of the asserted claims and the inventions of the asserted claims have significant value—including, the fact that the technology of the PAN realized revenues of over [REDACTED] for the Accused Products, as part of the analysis for Georgia Pacific Factor #6. Trial Tr. (Malackowski) at 1125:11-1128:03; Slide 37, 38 (attached to the record). Mr. Malackowski also showed that PAN's derivative sales of non-accused products which were sold with the Accused Products resulted in more than [REDACTED] additional sales to PAN. *Id.*

Mr. Malackowski testified that he reviewed a settlement license between Centripetal and Keysight Technologies (the "Keysight License" or "Keysight Agreement") and found it to be technically comparable to the hypothetical negotiation based on his own analysis and experience due to the shared specification, and Dr. Cole's assessment was "a belts-and-suspenders assessment." *See e.g.*, Trial Tr. at 1103:5-18; 1095:25-1096:03 (pointing to Dr. Cole's analysis), 1189:21-1190:13, 1190:23-1191:14, 1111:02-1111:015, 1231:19-1232:21; Trial Tr. (Cole) at 663:14-680:1.

Mr. Malackowski also testified regarding the relative value of the Asserted Patents to PAN in comparison to Keysight/Ixia. Trial Tr. (Malackowski) at 1101:15-1103:02. Specifically, he testified that PAN's main line of business is firewalls while Keysight's main line of business is network equipment; PAN is a more notable player in the security market whereas Keysight is a less notable player; the technology provided through the use of the Asserted Patents are core to PAN's business whereas they are not core to Keysight's business; and that the Asserted Patents in each case include the same specifications. Trial Tr. (Malackowski) at 1101:15-1103:02.

Mr. Malackowski also testified about his assessment of the economic comparability of the Keysight License to the hypothetical negotiation for a reasonable amount of royalties. He testified that the terms of the Keysight License are effectively similar to the hypothetical negotiation in this matter. First, given that the Keysight License came about in the middle of a lawsuit, the same amount of information was shared through this point in the litigation. Therefore, the Keysight License is relevant here, and comparable to the hypothetical negotiation. Trial Tr., 1096:15-1096:23; 1104:06-1104:18.

Further, the Keysight License was entered into at approximately within the same period the hypothetical negotiation in this case between Centripetal and PAN where infringement and validity is presumed. Mr. Malackowski testified that the license was executed less than two years before the hypothetical negotiation. As such, the Keysight License is reasonably close in time and certainly closer than any other benchmark discussed in this case. Trial Tr., 1098:18-1099:15; 1103:19-1104:22; 1100:11-1101:11; 1230:6-1231:3; Trial Tr., 1095:21-24.

He also stated that Keysight and PAN shared important similarities: 1) they are large publicly traded companies that are based in the U.S. with billions of dollars in annual revenues, 2) they operate in a similar field of technology – network security, 3) the products share similarities, and the customers are the same, namely the customers that each are seeking are the same, enterprise-wide customers for security purposes, 4) their business model is the same in the sense that they spend considerable amounts of money acquiring companies; and there was a royalty on revenues, although PAN tracks invoice billings and [REDACTED] [REDACTED] See e.g., Trial Tr., 1100:9-1105:11; Trial Tr., 1109:2-1110:25 (PAN acquired Demisto); PX-699; 1096:10-1099:15; PX-589.

Mr. Malackowski testified that Keysight and PAN were competitors, competing in the marketplace, including based on his review of the Palo Alto records. Trial Tr., 1114:12- 1121:7; PX-713, 714, 715, 693.

Mr. Malackowski squarely addressed the similarities and differences between the Keysight License and the hypothetical negotiation. *See e.g.*, Trial Tr., 1128:14-1133:4. Despite certain differences with the Keysight License, including the [REDACTED] [REDACTED]<sup>4</sup>, the essence of the Keysight License is similar to the essence of the hypothetical negotiation. The focus in both cases is the Patents in Suit asserted against the accused products, and how much money would be paid to Centripetal. Trial Tr. (Malackowski) at 1230:13-1230:18.

Mr. Malackowski also addressed apportionment and specifics on the economic and technical terms of the Keysight license that made it applicable here. He testified regarding the terms of the Keysight License, including that it included [REDACTED] [REDACTED]

*See e.g.*, Trial Tr. 1096:15-1197:13; 1113:8-1131:4; 1232:22-1233:19.

Centripetal provided sufficient evidence to prove Palo Alto Networks' success from sales of accused products. Trial Tr. (Malackowski) at 1122:3-1128:3; *see* Slide 37, 38 and 41.

Based on the foregoing citations, Mr. Malackowski's opinion was sufficiently supported with evidence to support his application of the apportioned royalty rates from the Keysight license. Further, Mr. Malackowski supported the reasonableness of his royalty rate calculations by reviewing third party valuations of 11 technologies acquired by PAN between 2017 and

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<sup>4</sup> Keysight indicated they cannot stop the infringement right away, and they needed three years to transition out. Trial Tr., 1230:06-1231:03.

December 2020, including the Demisto acquisition. Trial Tr. at 1089:23-1091: 15; 1106:22-1111:21; Slide 27, 28, and 30; PX-669. He opined, *inter alia*, that the acquired technologies relate to the Accused Product technologies, that the third-party valuations were performed by experts, and that nine out of the 11 valuations determined that a royalty rate [REDACTED] was attributable to the acquired technologies. *Id.* Mr. Malackowski specifically testified regarding the royalty rate in the Demisto technology acquired by PAN, which is the infringing technology which was integrated into PAN's Cortex XSOAR product. Trial Tr. (Malackowski) at 1108:10-1109:25; PX-669. The acquisition was completed less than a year before the hypothetical negotiation and the third-party valuation firm attributed [REDACTED] rate to the intangible assets of the acquired technology [REDACTED] Trial Tr. (Malackowski) at 1108:10-1109:25.

First, Mr. Malackowski properly ensured that his analysis only included the infringed products, which are the NGFWs with ACE for the '903 Patent; NGFWs with ACE, Cortex XDR in combination with Cortex XSOAR, and Cortex XSIAM for the '797 Patent; NGFWs with ACE, NGFWs without ACE in combination with Cortex XDR and Cortex XSOAR, and NGFWs without ACE in combination with Cortex XSIAM for the '573 Patent; and Panorama in combination with all NGFWs for the '437 Patent. Trial Tr. (Malackowski) at 1135:19-1136:21; demonstrative of PX-670.

Second, Mr. Malakowski provided his calculations for the worldwide and alternate royalty base which is of gross invoiced billings. His support for utilizing worldwide billing includes the testimony at trial of Vonnice French, Brett Ralston, and Nir Zuk. See Trial Tr. 1135-19-1138:06; 1139:3-1141:24; Slide 47 and 48; deposition clips of Mr. Zuk, Mr. Lee, and Mr.

Ralston. Mr. Malackowski's testimony and evidence support his reasonable royalty damages calculation of [REDACTED]

Mr. Malackowski apportioned to the royalty base by including only Accused Products which were sold during the damages period which begins on March 12, 2021 through the last date of data provided by PAN, which is April 2023. Trial Tr. (Malackowski) Trial Tr., at 1126:19-1128:03. He ensured that there was no double counting of revenues. Trial Tr. (Malackowski) Trial Tr., at 1133:05-1133:20 (no double counting the same sale for multiple patents).

As noted above, Mr. Malackowski further apportioned to the value of the Asserted Patents by utilizing the royalty rates in the comparable Keysight License, opining that a reasonable royalty rate [REDACTED]. Trial Tr. (Malackowski) at 1129:11-1130:11 (the [REDACTED] [REDACTED]); PX-964 at Exhibit 3.1-U (C); *see also* Trial Tr. (Cole) at 663:14-680:1.

Mr. Malackowski testified about the greater importance of the technology in suit to PAN relative to the importance of the technology that was licensed to Keysight to Keysight over the period spanning from 2015 to 2023. He stated that the number of patents that Keysight has over this period representing their innovation is significantly greater than what Palo Alto Networks would be bringing to the table. Trial Tr., 1128:04-10. Therefore, based on the foregoing, PAN should pay more, which is reflected in a royalty rate ranging from [REDACTED]. Trial Tr., 1128:11-1130-11. Thus, PAN is not entitled to JMOL of no damages.

### **III. CONCLUSION**

For the foregoing reasons, Centripetal requests that this Court deny PAN's motion for judgment as a matter of law pursuant to Federal Rules of Civil Procedure Rule 50(a).

Respectfully submitted,

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**CERTIFICATE OF SERVICE**

I hereby certify that on January 28, 2024, I electronically filed the foregoing with the Clerk of the Court using the CM/ECF system, which will automatically send notification of filing electronic to all counsel of record.

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